



# Fred Pine Assessment

Prepared for:  
Fred  
25 Gail St.  
Oldfield, MA

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## Summary

After assessing the health and structure of a stand of pine trees, I have rated them as low risk trees. While the likelihood of failure is improbable, the consequences of a failure at the root level could have catastrophic results.

## Introduction

### Background

In July of 2017, I was contacted By Mr. Fred. He had concerns regarding a stand of mature white pine trees on his property. Mr. Anastos wishes to remove the trees, but they are under conservation constrictions.

### Assignment

After discussions with Mr. Fred, it was agreed that I would:

- Assess and rate the risks associated with a stand of white pine trees on the property
- Provide management and abatement options if applicable.
- Provide a written report of my findings

### Scope of Work

The scope of this assignment is limited to trees located on Mr. Freds property.

The trees should be reassessed bi-annually, unless noted otherwise in this report.

A level two risk assessment was used for this report. A level two assessment includes the following (from ANSI A300 (part 9)-2011 Tree Risk Assessment):

- A 360 degree, ground-based visual inspection of the tree crown, trunk, root crown<sup>1</sup>, above ground roots, and site conditions around the tree and targets
- When sounding is specified, a mallet or equivalent tool may be used to detect large hollows and loose bark in the trunk, root crown, and above ground buttress roots<sup>2</sup>
- Use of hand tools, trowels, binoculars, or probes shall not be precluded
- An assessment shall include the identification of conditions indicating the presence of structural defects

### Limitations

Identifying and managing risks associated with trees is a subjective process. Since the nature of tree failures remains largely unknown, the ability to predict failure remains limited (see Arborist Disclosure Statement, pg. 9).

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<sup>1</sup> root crown - area where main roots join the plant stem, usually at or near ground level

<sup>2</sup> buttress roots – roots at the trunk base that help support the tree and equalize mechanical stress

## Purpose and Use

The purpose of this report is to provide objective information regarding the risks presented by trees that could impact life and property.

## Observations

I met with Mr. Fred at his home at 36 Gail St., Oldfield, MA on July 26, 2017 (site map, pg. 6). A stand of approximately 12 large White pines (*Pinus strobus*) lie to the north of his house, on a slope leading down to a stream (photos 1 and 2, pg. 7). Average diameter is over 24" dbh. I estimate the heights to be well over 100'. The root zone is primarily turf, and fairly undisturbed. While the trees are within 100' of the stream, there is no indication that the area is especially saturated. Many of the trees exhibit a lean toward the south (photo 3, pg. 8). The root crowns of all the trees show good structure with sound buttress root formation. The lower trunks appear solid and are primarily single stemmed. No major defects were noted. One tree, located in the northwest corner exhibited a seam where 2 codominant stems arise from the base (photo 4, pg. 8). A few others exhibited some co-dominant stems in the upper crown, but without included bark. The live crown ratios are good, but most of the trees have heavier crowns on the south sides. The foliage appears normal in color and density. Minimal amounts of deadwood were observed.

## Discussion

### Methodology

I have chosen to base the risk factor on the Qualitative Risk Assessment as an approach for this report. The following information regarding this approach comes directly from the International Society of Arboriculture's Tree Risk Assessment Manual (Dunster, Julian A., E. Thomas Smiley, and Sharon Lilly. 2013).

Qualitative risk assessment is the process of using ratings of the likelihood and consequences of an event to determine a risk level and evaluate the level of risk against qualitative criteria. Often, ratings are combined in a matrix to categorize risk. Inherent subjectivity and ambiguity are limitations of the qualitative approach. In order to increase reliability and consistency of application, it is important to provide clear explanations of the terminology and significance of the ratings defined for likelihood, consequences, and risk.

The first part of the assessment is to determine the *Likelihood of Failure* and apply one of four ratings. Using the tree with the most suspect structure as a baseline, I have determined the likelihood of failure for the trees in this stand to be **Improbable**: "The tree or branch is not likely to fail during normal weather conditions and may not fail in many severe weather conditions within the specified time period".

Next, the *Likelihood of Impacting a Target* is assessed using one of four ratings: Using the tree most likely to impact a target as a baseline, I have determined the likelihood of impacting a target to be **High**: "The failed tree or branch will most likely impact the target. This is the case when a fixed target is fully exposed to the assessed tree or near a high-use road or walkway with an adjacent street tree".

This results in a rating for the *Likelihood of a Tree Failure Impacting a Target*, which for this tree is **Unlikely**.

Likelihood of a Tree Failure Impacting a Target				
Likelihood of Failure	Likelihood of Impacting Target			
	Very Low	Low	Medium	High
Imminent	Unlikely	Somewhat likely	Likely	Very Likely
Probable	Unlikely	Unlikely	Somewhat likely	Likely
Possible	Unlikely	Unlikely	Unlikely	Somewhat likely
Improbable	Unlikely	Unlikely	Unlikely	Unlikely

The next step is to determine the *Consequences of Failure*. Consequences are estimated based on the value of the target and the harm that may be done to it. The consequences depend on the part size, fall characteristics, fall distance, and any factors that may protect the risk target from harm. The significance of target values—both monetary and otherwise—is subjective and relative to the client. Values should be assessed from the client’s perspective. I have determined the *Consequences of Failure* to be **Severe**: “consequences that could involve serious personal injury or death, damage to high-value property, or disruption of important activities”.

Once the *Consequence of Failure* rating has been determined, it is combined with the *Likelihood of a Tree Failure Impacting a Target* rating using the following matrix to determine a *Tree Risk Rating*.

Risk Rating Matrix				
Likelihood of Failure and Impact	Consequences			
	Negligible	Minor	Significant	Severe
Very Likely	Low	Moderate	High	Extreme
Likely	Low	Moderate	High	High
Somewhat likely	Low	Low	Moderate	Moderate likely
Unlikely	Low	Low	Low	Low

This matrix was designed specifically for the evaluation of risk posed by tree failures. The limitations associated with using a matrix include the inherent subjectivity associated with the selection of both the likelihood and consequence factors, and the lack of comparability to other types of risk assessed using other means.

In the tree risk assessment matrix, four terms are used to define levels of risk: low, moderate, high, and extreme. These risk ratings are used to communicate the level of risk and to assist in making recommendations to the owner or risk manager for mitigation and inspection frequency. The priority for action depends upon the risk rating and risk tolerance of the owner or manager.

Using this matrix, I have determined the risk associated with these trees to be **Low**: “Some trees with this level of risk may benefit from mitigation or maintenance measures, but immediate action is not usually required. Tree risk assessors may recommend retaining and monitoring these trees, as well as mitigation that does not include removal of the tree”.

## Considerations

It would probably take a catastrophic failure at the base of the closest trees to impact the house. However, even though I have applied a low risk rating to this stand of trees, it is unlikely to ease the mind of the home occupants. Many of these trees, especially those closest to the house, exhibit a lean and heavy



crown weight toward the house. Given their position and exposure to strong winter storms from the north-east, a storm of major consequence could be a threat.

Removal of some trees considered to be significant threats to the home is a consideration, but the remaining trees would be exposed to conditions they have yet to compensate for, perhaps increasing the risk that they may fail.

## Conclusions

From the Arborist Disclosure Statement (pg. 9): “Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate them”.

While it is my opinion that the risk associated with this stand of trees is low, an extreme weather event could still cause a failure that would likely have serious consequences. Unfortunately, it is also my opinion that there is little that could be done to abate the risk, other than removal.

## Management Options

- Annual monitoring for any health or structural changes
- Check trees after any extreme weather event for changes in the soil, roots, trunk or crown. Inspect any large stem unions identified as suspect in this report
- Any tree work should be done by a qualified arborist accredited by the New Hampshire Arborist Association, Massachusetts Arborist Association, Tree Care Industry Association or International Society of Arboriculture.
- Remove trees and replace with suitable trees and or large shrubs. Work with the Conservation Commission to reach an accord regarding size, species, and number of replacement plants.

## Site Maps

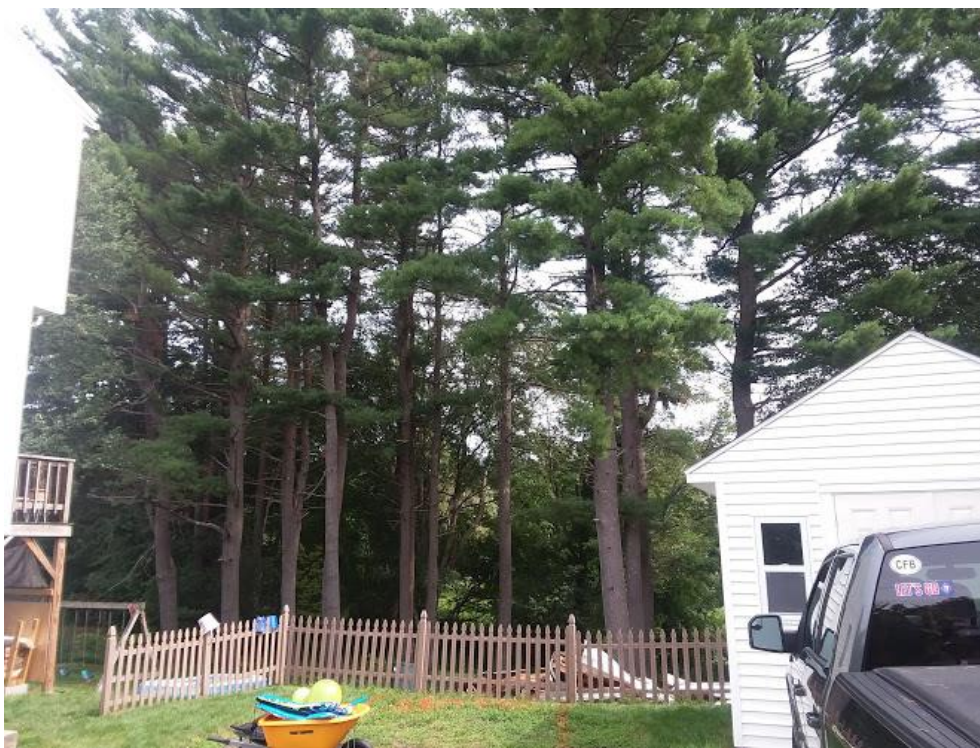


*An overhead view of the Anastas property from Bing Maps*



*An oblique view of the property, looking north. The arrow points to the location of the tree with the co-dominant stems at the base*

## Photos 1 and 2



*Views of the stand of White pine located in the back yard of the Fred residence*



3 and 4



*The photo on the left shows the tree most likely to cause serious damage in the event of a failure. Note the lean toward the house. The photo on the right exhibits co-dominant stems with an active seam at the base of a pine located in the northwest portion of the property.*

## Arborist Disclosure Statement

Arborists are tree specialists who use their education, knowledge, training, and experience to examine trees, recommend measures to enhance the beauty and health of trees, and attempt to reduce the risk of living near trees. Clients may choose to accept or disregard the recommendations of the arborist, or to seek additional advice.

Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. Trees are living organisms that fail in ways we don't fully understand. Conditions are often hidden within trees and below ground. Arborists cannot guarantee that a tree will be healthy or safe under all circumstances, or for a specified period of time. Likewise, remedial treatments, like any medicine, cannot be guaranteed.

Treatment, pruning and removal of trees may involve considerations beyond the scope of the arborist's services such as property boundaries, property ownership, site lines, disputes between neighbors, and other issues. Arborists cannot take such considerations into account unless complete and accurate information is disclosed to the arborist. An arborist should then be expected to reasonably rely upon the completeness and accuracy of the information provided.

Trees can be managed, but they cannot be controlled. To live near trees is to accept some degree of risk. The only way to eliminate all risk associated with trees is to eliminate them.

**I, \_\_\_\_\_, acknowledge that I have received a copy of this disclosure and that I have read and understand the statement.**

**Signed \_\_\_\_\_ Date \_\_\_\_\_**

## Assumptions and Limiting Conditions

**1** Any legal description provided to the consultant / appraiser is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters of legal character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

**2** It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other government regulations.

**3** Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant / appraiser can neither guarantee nor be responsible for accuracy of information provided by others.

**4** The consultant / appraiser shall not be required to give testimony or attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

**5** Loss or alteration of any part of this report invalidates the entire report.

**6** Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior written or verbal consent of the consultant / appraiser.

**7** Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of the consultant / appraiser--particularly as to value conclusions, identity of the consultant / appraiser, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant / appraiser as stated in his qualification.

## Certificate of Performance

I, Howard Gaffin, certify that:

I have personally inspected the tree on the property referred to in this report and have stated my findings accurately. The extent of the evaluation and/or appraisal is in the attached report.

I have no current or prospective interest in the vegetation or the property that is the subject of this report and have no bias with respect to the parties involved.

The analysis, opinions, and conclusions stated herein are my own and are based on current scientific procedures and facts.

My compensation is not contingent upon the reporting of a predetermined conclusion that favors the cause of the client or any other party, nor upon the results of the assessment, the attainment of stipulated results, or the occurrence of any subsequent events.

My analysis, opinions, and conclusions were developed and this report has been prepared according to commonly accepted arboricultural practices.

No one provided significant professional assistance to the consultant, except as indicated within the report.

I further certify that I hold the following credentials:

- Registered Consulting Arborist #458
- Board Certified Master Arborist #NE-0363B
- Massachusetts Arborist Association Certified Arborist#1468
- ISA Qualified Tree Risk Assessor

I have been involved with the practice of arboriculture for over 30 years.

Signed HHH-

Date 8/1/2017